(6) Shield personnel from radiation exposure.

(b) *Radiological alarm systems.* Radiological alarm systems must be provided in accessible work areas as appropriate to warn operating personnel of radiation and airborne radioactive material concentrations above a given setpoint and of concentrations of radioactive material in effluents above control limits. Radiation alarm systems must be designed with provisions for calibration and testing their operability.

(c) *Effluent and direct radiation monitoring.* (1) As appropriate for the handling and storage system, effluent systems must be provided. Means for measuring the amount of radionuclides in effluents during normal operations and under accident conditions must be provided for these systems. A means of measuring the flow of the diluting medium, either air or water, must also be provided.

(2) Areas containing radioactive materials must be provided with systems for measuring the direct radiation levels in and around these areas.

(d) *Effluent control.* The ISFSI or MRS must be designed to provide means to limit to levels as low as is reasonably achievable the release of radioactive materials in effluents during normal operations; and control the release of radioactive materials under accident conditions. Analyses must be made to show that releases to the general environment during normal operations and anticipated occurrences will be within the exposure limit given in §72.104. Analyses of design basis accidents must be made to show that releases to the general environment will be within the exposure limits given in §72.106. Systems designed to monitor the release of radioactive materials must have means for calibration and testing their operability.

§ 72.128 Criteria for spent fuel, high-level radioactive waste, reactor-related greater than Class C waste, and other radioactive waste storage and handling.

(a) *Spent fuel, high-level radioactive waste, and reactor-related GTCC waste storage and handling systems.* Spent fuel storage, high-level radioactive waste storage, reactor-related GTCC waste storage and other systems that might contain or handle radioactive materials associated with spent fuel, high-level radioactive waste, or reactor-related GTCC waste, must be designed to ensure adequate safety under normal and accident conditions. These systems must be designed with—

(1) A capability to test and monitor components important to safety,

(2) Suitable shielding for radioactive protection under normal and accident conditions,

(3) Confinement structures and systems,

(4) A heat-removal capability having testability and reliability consistent with its importance to safety, and

(5) means to minimize the quantity of radioactive wastes generated.

(b) *Waste treatment.* Radioactive waste treatment facilities must be provided. Provisions must be made for the packing of site-generated low-level wastes in a form suitable for storage onsite awaiting transfer to disposal sites.

[53 FR 31658, Aug. 19, 1988, as amended at 66 FR 51843, Oct. 11, 2001]

§ 72.130 Criteria for decommissioning.

The ISFSI or MRS must be designed for decommissioning. Provisions must be made to facilitate decontamination of structures and equipment, minimize the quantity of radioactive wastes and contaminated equipment, and facilitate the removal of radioactive wastes and contaminated materials at the time the ISFSI or MRS is permanently decommissioned.

Subpart G—Quality Assurance

SOURCE: 64 FR 56122, Oct. 15, 1999, unless otherwise noted.

§ 72.140 Quality assurance requirements.

(a) *Purpose.* This subpart describes quality assurance requirements that apply to design, purchase, fabrication, handling, shipping, storing, cleaning, assembly, inspection, testing, operation, maintenance, repair, modification of structures, systems, and components, and decommissioning that are important to safety. As used in this

subpart, ''quality assurance'' comprises all those planned and systematic actions necessary to provide adequate confidence that a structure, system, or component will perform satisfactorily in service. Quality assurance includes quality control, which comprises those quality assurance actions related to control of the physical characteristics and quality of the material or component to predetermined requirements. The certificate holder and applicant for a CoC are responsible for the quality assurance requirements as they apply to the design, fabrication, and testing of a spent fuel storage cask until possession of the spent fuel storage cask is transferred to the licensee. The licensee and the certificate holder are also simultaneously responsible for these quality assurance requirements through the oversight of contractors and subcontractors.

(b) *Establishment of program.* Each licensee, applicant for a license, certificate holder, applicant for a CoC shall establish, maintain, and execute a quality assurance program satisfying each of the applicable criteria of this subpart, and satisfying any specific provisions which are applicable to the licensee's, applicant's for a license, certificate holder's, and applicant's for a CoC activities. The licensee, applicant for a license, certificate holder, and applicant for a CoC shall execute the applicable criteria in a graded approach to an extent that is commensurate with the quality assurance requirements' importance to safety. The quality assurance program must cover the activities identified in this subpart throughout the life of the activity. For licensees, this includes activities from the site selection through decommissioning prior to termination of the license. For certificate holders, this includes activities from development of the spent fuel storage cask design through termination of the CoC.

(c) *Approval of program.* (1) Each licensee, applicant for a license, certificate holder, or applicant for a CoC shall file a description of its quality assurance program, including a discussion of which requirements of this subpart are applicable and how they will be satisfied, in accordance with § 72.4.

(2) Each licensee shall obtain Commission approval of its quality assurance program prior to receipt of spent fuel and/or reactor-related GTCC waste at the ISFSI or spent fuel, high-level radioactive waste, and/or reactor-related GTCC waste at the MRS. Each licensee or applicant for a specific license shall obtain Commission approval of its quality assurance program before commencing fabrication or testing of a spent fuel storage cask.

(3) Each certificate holder or applicant for a CoC shall obtain Commission approval of its quality assurance program before commencing fabrication or testing of a spent fuel storage cask.

(d) *Previously-approved programs.* A quality assurance program previously approved by the Commission as satisfying the requirements of Appendix B to part 50 of this chapter, subpart H to part 71 of this chapter, or subpart G to this part will be accepted as satisfying the requirements of paragraph (b) of this section, except that a licensee, applicant for a license, certificate holder, and applicant for a CoC who is using an Appendix B or subpart H quality assurance program shall also meet the recordkeeping requirements of § 72.174. In filing the description of the quality assurance program required by paragraph (c) of this section, each licensee, applicant for a license, certificate holder, and applicant for a CoC shall notify the NRC, in accordance with § 72.4, of its intent to apply its previously-approved quality assurance program to ISFSI activities or spent fuel storage cask activities. The notification shall identify the previously-approved quality assurance program by date of submittal to the Commission, docket number, and date of Commission approval.

[53 FR 31658, Aug. 19, 1988, as amended at 65 FR 50617, Aug. 21, 2000; 66 FR 51843, Oct. 11, 2001]

§ 72.142 Quality assurance organization.

(a) The licensee, applicant for a license, certificate holder, and applicant for a CoC shall be responsible for the establishment and execution of the quality assurance program. The licensee and certificate holder may delegate to others, such as contractors,